August 2005

Volume 10 No. 8

Report to
STAKEHOLDERS
http://www.edwards.af.mil/penvmng/index.html

Pitfall closures help protect desert tortoises

INSIDE

In this issue . . .

BEFORE

Left, an open mine shaft can be hazardous to desert tortoises at Edwards Air Force Base (AFB). Tortoises can fall in and not be able to get out, sometimes causing death.

AFTER

Right, the shaft is covered with a mesh screen through Environmental Managment's pitfall closure process. In addition to mesh screen covers, pitfall hazards can be made safe for tortoises by backfilling the hole, sloping the walls, building ramps or installing exclusion fencing.

Not to be confused with a downward turn in the stock market, pitfalls can be hazardous to the federal-threatened species, the desert tortoise.

At Edwards Air Force Base (AFB), pitfalls include mine shafts, trenches, foxholes, homestead cellars, water wells, or storm drainage pipes. They are defined as man-made holes or crevices.

Certain types of pitfalls pose a potential threat to animals, particularly the desert tortoise. Steep angles of the side walls can prevent a tortoise from climbing out of a pitfall, and a drop into a deep pitfall could cause an injury or death.

"A live desert tortoise was discovered in one of the pitfalls during a survey," said Thomas Mull, a TYBRIN contractor and program manager for

See *Pitfall* page 6

If you have a question about the Edwards Air Force Base Environmental Management program, you may address it to Stakeholders Forum, Attn: Gary Hatch or Miriam Harmon, 5 E. Popson Ave., Edwards AFB, CA 93524-8060, or send e-mail to: afftc.em.com.rel@edwards.af.mil

Next RAB Meeting

November 2005
5:30 p.m.
Location and Time To Be Determined

The public is invited.

Q. Who monitors the on-base drinking water for contaminants and how do we know it is safe to drink?

A. The Edwards Air Force Base (AFB) Bioenvironmental Engineering office routinely tests the base drinking water to ensure it meets the regulatory levels set by California and the federal government. Organics and inorganics are measured monthly, quarterly, biannually, annually, or as required by the regulatory agencies. These chemical and bacteriological results are reported to the State Department of Health Services.

The water is tested for known contaminants in the area, and to verify that the level of naturally occurring chemicals such as arsenic, lead and nitrate are not at levels that would present a health risk.

Sampling for microbiological organisms is conducted weekly. Certificated personnel collect about 45 samples each month from state-approved locations. These samples are sent to an independent state-certified laboratory for analyses. A water quality report is produced annually.

It is called the Consumer Confidence Report for water quality and it comes in two parts — one for the Main Base and one for the Air Force Research Laboratory. Both reports were published in the Desert Wings newspaper. They are available on the Edwards AFB Centernet at: *http://www.edwards.af.mil/95med-group/DOCS_HTML/AMDS/Bioenvironmental/bioenvironmental_eng.html*. The reports are also available by request from Gary Hatch, via phone at (661) 277-1454 or email at *gary.hatch@edwards.af.mil*.

Most of the drinking water supplied to residents and businesses at Edwards AFB comes from the Antelope Valley-East Kern Water Agency. The Antelope Valley-East Kern Water Agency gets its water from the California aqueduct.

The base also uses water wells to supply drinking water. These wells are several miles away from any contaminated groundwater sites. None of the contaminated sites Edwards is cleaning up threatens any of the base's drinking water wells. ■

Report to Stakeholders is a publication of the Edwards AFB Environmental Management Division. Its purpose is to inform and educate the public, base workers and residents about continuing Environmental Management efforts at Edwards AFB. It currently has a circulation of 6,000, including about 2,000 subscribers.

Contents of the *Report to Stakeholders* are not necessarily the official view of, or endorsed by, the U.S. government, the Department of Defense, or the Department of the Air Force.

All photos are property of the Air Force.

Comments or questions should be directed to: Gary Hatch, 95 ABW/PAE, 5 E. Popson Ave., Bldg. 2650A, Edwards AFB, CA 93524-8060, (661) 277-1454. **E-mail: gary.hatch@edwards.af.mil**

Report to **STAKEHOLDERS**

Commander 95th Air Base Wing..... Col. Drew D. Jeter
Base Civil Engineer..... James Judkins
Division Chief Environmental Management..... Robert Wood
Branch Chief Environmental Restoration..... Robert Wood
Branch Chief Environmental Conservation..... Gerald Callahan
Branch Chief Environmental Quality..... Robert Shirley

Carpooling can save time and money

Time, money, and a cleaner environment are accomplished when people carpool. At Edwards Air Force Base (AFB) many people commute to and from towns near and not so near the base. Carpooling is a way for base workers to save money. Those who carpool are also helping the environment by preventing pollution.

In California, about half the air pollution comes from cars and trucks. Two big ways to reduce air pollution are to drive less (even a little less) and to drive smart. Fewer trips in the car or truck will help cut the air pollution. How a car or truck is driven will also reduce the air pollution.

FAST FACTS

What is carpooling?

A carpool is made up of two or more people sharing a ride in a private or company vehicle. Carpools can operate in different ways and are flexible. Commuters can decide on their own arrangements. One approach is to rotate vehicle use among carpoolers with no exchange of money. An alternative is to organize a vanpool. On base, the Civil Engineer Directorate participates in two independent vanpools.

According to the American Automobile Association, the average cost of driving a mid-size car 15,000 miles a year is around $7,471 taking into account all operation and maintenance costs. If driving a sport-utility vehicle, the cost reaches almost $8,000 a year.

Save money

Carpooling with just two other people can cut your fuel cost by two-thirds. You can also save wear and tear on the car. For federal employees, the U.S. Department of Transportation subsidizes the cost of vanpool riding up to $105 a month.

Air quality

Vehicle emissions contribute to health and environmental problems like urban smog, air toxics, and global warming. Things that can help with emissions are to maintain the car properly, avoid unnecessary driving, and driving wisely.

More traffic

Vehicle traffic in the United States is doubling every 20 years. Traffic trends that see cars driving more and more miles will soon begin to outpace technological progress in vehicle emission control.

Alternatives

Several options are available to help reduce the amount a person needs to drive. These include consolidating trips, telecommuting, carpooling using public transit, choosing clean transportation alternatives like biking or walking and joining existing vanpools or starting a new vanpool. Just nine to 10 people are needed to start a vanpool.

When carpooling you can:

- *Relax and let someone else drive some of the time*
- *Help alleviate traffic congestion in the community*
- *Reduce air pollution emissions*
- *Save gas and money*
- *Save wear and tear and depreciation on your car*
- *Meet new and interesting people*
- *Reduce stress*

Those interested in carpooling can check with their office to see if anyone else is also interested in carpooling. For information on vanpooling, contact Layi Oyelowo, 95 ABW/CEVC at (661) 277-1457 or Julio Barrios, JT3/CH2MHILL Geographic Information Systems at (661) 277-6292. The Edwards AFB Bulletin, which can be found internally on the CenterNet site, has information on carpools and vanpools in surrounding communities.

$17M cleanup budget proposed for FY 2006

Fewer new cleanup projects starting but more money for documenting future cleanup technologies is the direction for Edwards' $17 million cleanup budget in 2006.

Such documenting activity is required before sites listed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) of 1980, or Superfund law, can be closed. CERCLA governs and defines the process for cleaning up past releases of hazardous substances.

The 2006 budget is slightly increased over that of 2005, by about a million dollars, according to environmental restoration branch chief David Steckel. Steckel presented the proposed budget during the May 2005 meeting of the Edwards Restoration Advisory Board (RAB), a group of community advisors who provide input on priorities for the annual cleanup budget.

Summarizing the main categories of spending in 2006, Steckel noted that costs for management have gone up a little base wide. Spending for operation and maintenance is down, but this reflects a consolidation of a number of sites into single projects.

> *"Operation and maintenance of systems is increasing as time goes on in the ERP. A spike in spending to prepare records of decision documents for fiscal year 2006 reflects a mature cleanup program that has begun to close out sites under the Superfund law process."*
>
> David Steckel
> Environmental Restoration
> Program Branch Chief

"Operation and maintenance of systems is increasing as time goes on in the environmental restoration program," Steckel said. "A spike in spending to prepare record of decision documents for fiscal year 2006 reflects a mature cleanup program that has begun to close out sites under the Superfund law process."

There is nothing budgeted for new studies in 2006. "That's because all of the Operable Units are either in the remedial investigation or feasibility study phase or have completed it," Steckel explained.

As the cleanup program continues, spending for monitoring can be expected to increase. But less is being spent in the monitoring category for this year than last.

"Projected spending for management is limited by Air Force headquarters to at or below 10 percent of the budget and there is a goal to bring it down to five percent," Steckel said.

One such area of cost-savings involves basewide projects.

"Basewide projects are those that deal with many sites or possibly with the entire base," Steckel said. "These concern things like the support of the four staging areas proposed in the 2006 budget. Those are areas where we can stage the contractor so that they keep their equipment in one specific area and mobilize out of there."

Saving both time and money, the availability of four areas where contractors can stage their operations would eliminate the need for contractors to conduct staging of operations off base or to build separate staging areas for their projects every time they move to a new location.

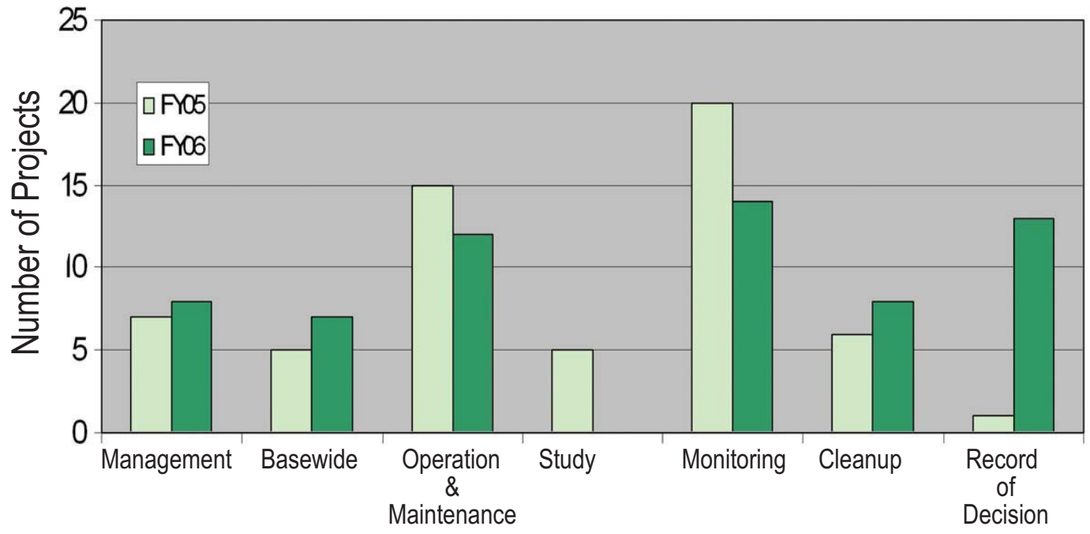
Without four staging areas, "we will be paying much more in travel cost and labor," Steckel said.

Other items covered in the budget include technical support for in-house contractors, a plan for a technical and practicability containment zone process at the Air Force Research Laboratory's Site 37, and support of the computer mapping of equipment, monitoring wells and site boundaries that is provided by Geographic Information Systems (GIS).

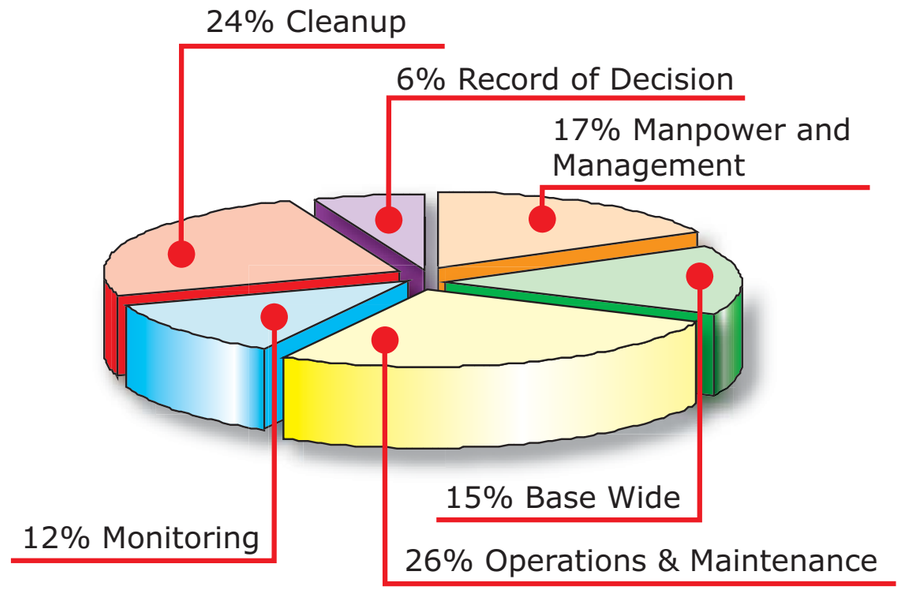
Steckel noted that a Land Use Control Implementation Plan is part of the GIS effort.

"What this does is lay down the ground rules for the Air Force to treat sites that may not be completely clean. If these sites are fenced or if there are any special restrictions imposed on that piece of land, be it drilling, or digging, or anything of the kind, the restriction will be available for people to see in the GIS database," he said.

Environmental Restoration Program Projects



NEW FISCAL YEAR — *Above is a projects chart the Environmental Restoration Program (ERP) put together to show what types of projects it will focus on in fiscal year 2006, starting in the fall. There is also a comparison for this fiscal year from fiscal year 2005. Below, a pie chart categorizing the ERP budget by category at Edwards Air Force Base. Most will go into operation and maintenance and cleanup.*



Pitfall (from page 1)

pitfall closures. "In accordance with the Endangered Species Act of 1973, Environmental Management's (EM's) Conservation Branch initiated the closure of potentially hazardous pitfalls on base."

Desert tortoises were listed as a threatened species by the U.S. Fish and Wildlife Service (USFWS) in 1990. Disease, human encroachment and predators, like the raven, caused a steady decline in the tortoise population. In an effort to further protect the survival of the species, the USFWS designated 6.4 million acres of land for desert tortoise critical habitat in 1994. Nearly 61,000 acres of this habitat can be found on Edwards AFB.

Before any action could be taken, the pitfalls were located, evaluated for threat probability, and a closure strategy was developed.

Mull and a subcontractor team from Earth Tech, Inc., constructed a map of known pitfall sites using EM's Geographic Information System (GIS). These sites had previously been identified during land surveys. Next, each site was examined in the field and assigned a threat level based on the pitfall's size, depth, stability and slope or angle.

"If the hole was deep or did not provide an easy escape route, then a high probability of threat was assigned," Mull said. "If the hole was shallow or had a gentle slope to climb, the pitfall was not considered a threat to the tortoise."

After being prioritized according to threat potential, each pitfall was given a proposed closure method. With research complete, the Conservation Branch wrote a report detailing its proposed plan of action. With the approval of the USFWS, Mull and his team began closing the pitfalls in 2000.

There were several methods used to close the pitfalls, including mesh screens, backfilling, escape ramps, sloping and exclusion fencing.

Mesh screens, made out of noncorrosive metal, are able to withstand a man's weight if standing on top of it. These most effectively covered deep pits, mine shafts and historical sites that Edwards wanted to preserve. Small holes were easier to backfill with dirt found in the surrounding area.

As an alternative to covering a hole, escape ramps and sloping allowed a tortoise to enter and leave a pitfall safely. Wooden boards or dirt were used to make the angle of the hole less steep and easier to climb. Escape ramps and sloping were a preferred method for wide, shallow pits. In rare cases, if work was being done on a historical pitfall site, a short wire mesh known as exclusion fencing was erected to keep desert tortoises out of the area.

The pitfall closures took more effort than throwing dirt or a wire cover over a hole. Some pitfall sites, like the homestead cellars, needed to be handled with more care.

"Before any activity was done on a site, we coordinated with everyone who had an interest in the area," Mull said. "For example, an archaeologist was present at a historical pitfall to ensure nothing at the site was disturbed during the application of the mesh screen."

Another cause of concern was finding that another species had taken up residence in a pitfall.

"In one case, we ran across a pitfall inhabited by burrowing owls," Mull said. "We had to shape the wire mesh so that it had a raised opening in the middle. This shape allowed the tortoise to walk over the pitfall and around the raised mesh, and the owls could fly in and out of the opening."

These unique situations proved to be no problem for Mull and his team. At its completion in 2004, the seven-year program had successfully closed over 180 pitfalls on base. ■

HELPING HANDS
Left, Environmental Management (EM) contractors are just about done piecing together exclusion fencing, which is one of the many ways EM uses to prevent desert tortoises from falling into pitfalls on the base.

HOME

Before EM contractors began placing exclusion fence around some pitfalls, they made sure that they were not interfering with the habitat surrounding them. For instance, the burrowing owl, left, lives in the abandoned shaft in the botton photo.

KEEPING IT SAFE

Above, contactors put on the finishing touches to exclusion fence. Above right, is another example of exclusion fence around a mound of boulders to prevent tortoises from walking up and tumbling. Bottom, shows the fence the contractors were working on around a pitfall. The fence protects tortoises and allows a burrowing owl access to its nest in the shaft.

☐ New subscription
☐ Change of address
☐ Cancel subscription

Mail to:
95 ABW/PAE
RTS Subscription
5 E. Popson Ave., Bldg. 2650A
Edwards AFB, Calif., 93524-8060

Name _____

Organization _____

Address _____

City _____ **State** _____ **Zip** _____

RAB Members

BORON
Dara English (760) 762-6527 Home
dara.english@Borax.com (760) 762-7867 Work

CALIFORNIA CITY
Bob Smith (760) 373-4317 Home
bsmith@ccis.com

LANCASTER
Larry Hagenauer (661) 277-9133 Work
Larry.Hagenauer@edwards.af.mil
ALTERNATE: Frank Roberts (661) 723-6018 Work

MOJAVE
Victor Yaw (661) 824-2886 Home
(661) 275-4296 Work

NORTH EDWARDS
Ruby Messersmith (760) 769-4357 Home
messersmith@ccis.com

ROSAMOND
David Newman (661) 722-6433 Work
dnewman@ispwest.com
ALTERNATE: Leslie Uhazy (661) 256-8209 Home
luhazy@avc.edu (661) 722-6417 Work

EDWARDS AFB

Housing
Amy Bouchard (661) 258-0190 Home
noelamy@adelphia.net

Main Base Air Base Wing
Mike Cogan (661) 277-7381 Work

Main Base Test Wing
Vacant

NASA Dryden
William Brandweiner (661) 276-3339 Work
William.Brandweiner@dfrc.nasa.gov

North Base
Vacant

South Base
Julie Newton (661) 275-0551 Work
julie.newton@edwards.af.mil

AF Research Lab/ Propulsion Directorate
Milton McKay (661) 275-5191 Work
milton.mckay@edwards.af.mil

Report to Stakeholders Staff

EDITOR/WEB
Miriam Harmon

WRITING AND DESIGN SUPPORT
Writer: Darlene Tefft Norwood
Writer: Leilani Richardson
Writer: Patti Kumazawa
Graphic Artist: Paul Rogers

Published data and documents relating to the Environmental Restoration Program are available for public review in information repositories at four locations. The current information repositories are located in the cities of Boron, Lancaster and Rosamond, as well as Edwards AFB. They are updated when new documents are released.

If you have any questions about information in the repositories, please contact Gary Hatch, Environmental Public Affairs at (661) 277-1454 or through e-mail at gary.hatch@edwards.af.mil.

Location	Days and Hours of Operation	
Edwards AFB Library 5 W. Yeager Blvd. Building 6225 Edwards AFB, Calif. (661) 275-2665	Mon-Thurs Fri. Sat & Sun	9:30 a.m. - 7 p.m. 9:30 a.m. - 6 p.m. 10:30 a.m. - 6 p.m.
Kern County Public Library Wanda Kirk Branch 3611 Rosamond Blvd. Rosamond, Calif. (661) 256-3236	Tue & Wed Thurs-Sat	Noon - 8 p.m. 10 a.m. - 6 p.m.
Los Angeles County Public Library 601 W. Lancaster Blvd. Lancaster, Calif. (661) 948-5029	Mon-Wed Thurs & Fri Sat	10 a.m. - 8 p.m. 10 a.m. - 5 p.m. 11 a.m. - 5 p.m.
Col. Vernon P. Saxon, Jr. Aerospace Museum 26962 Twenty Mule Team Road Boron, Calif. (760) 762-6600	Mon-Sun	10 a.m. - 4 p.m.

95 ABW/CEVR
5 E. Popson Ave., Bldg. 2650A
Edwards AFB, CA 93524-8060
Official Business

Standard Rate
U.S. Postage
PAID
Edwards AFB CA
Permit No. 3

ADDRESS SERVICE REQUESTED

Edwards Recycles
Printed on recycled paper